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CASE REPORT

MRSA tricuspid valve infective endocarditis with multiple embolic lung abscesses treated by combination therapy of vancomycin, rifampicin, and sulfamethoxazole/trimethoprim

Takeo Fujino (MD), Yoshifumi Amari (MD), Masahiro Mohri (MD), Mitsuru Noma (MD), Hideo Yamamoto (MD)*

Department of Cardiology, Kyushu Kosei-Nenkin Hospital, Japan

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KEYWORDS
Infective endocarditis;
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Summary A 26-year-old pregnant woman who was an intravenous drug user (IDU) was admitted to our hospital for the treatment of tricuspid valve infective endocarditis (IE) and lung abscesses due to *methicillin-resistant Staphylococcus aureus* (MRSA). We started to treat her with vancomycin (VCM) alone and then in combination with rifampicin (RFP), but her condition did not improve. Then we added sulfamethoxazole/trimethoprim (SMZ/TMP) to VCM and RFP. After that, she improved rapidly. In Japan, there are very few reports about tricuspid valve IE caused by MRSA in IDUs. This case suggests that the combination of VCM, RFP, and SMZ/TMP may be effective for the treatment of severe MRSA infections.

Introduction

Vancomycin (VCM) is a drug of first choice in the treatment of *methicillin-resistant Staphylococcus aureus* (MRSA) infections, but it has a high rate of treatment failure. Combination therapy may be considered in selected invasive MRSA infections refractory to standard VCM monotherapy. We present a case of MRSA tricuspid valve (TV) infective endocarditis (IE) with multiple embolic lung abscesses, in which the addition of sulfamethoxazole/trimethoprim (SMZ/TMP) to the combination of VCM and rifampicin (RFP) was effective.

Case history

A 26-year-old woman who was an intravenous drug user (IDU) was admitted to another hospital for the

* Corresponding author at: Department of Cardiology, Kyushu Kosei-Nenkin Hospital, 1-8-1 Kishinoura, Yahata-Nishiku, Kitakyushu 806-8501, Japan. Tel.: +81 93 641 5111; fax: +81 93 642 1868.
E-mail address: hideo.yamamoto@qkn-hosp.jp (H. Yamamoto).

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treatment of TV IE caused by *methicillin-sensitive Staphylococcus aureus*. She was discharged after 4 weeks of treatment with penicillin G (2 million units/day), but she did not stop being an IDU after that. Four months later, she became pregnant. Ten months later, 3 days before admission to our hospital, she suffered from fever (>38 °C) and cough. General fatigue and back pain also developed and she was admitted to the obstetrical department of our hospital.

Her blood pressure was 100/60 mmHg, heart rate was 105 min^{-1} and SpO_2 under room-air condition was 98%. Many marks of intravenous drug injection existed on her hands. She had no peripheral manifestations of IE, such as petechiae, Roth spot, and Osler node. Levine 2/6 systolic regurgitant murmur was audible at 4th left intercostal space. She had coarse crackles in both sides of the chest.

Abnormal laboratory findings were white blood cell count 12,200 μl (neutrophils 92%), hemoglobin 9.8 mg/dl, C-reactive protein 12.7 mg/dl, and positive hepatitis C virus antibody. Echocardiography revealed vegetation (3 mm × 7 mm) on the anterior TV and anterior TV prolapse with loss of coaptation and with moderate TV regurgitation (peak velocity: 300.3 cm/s), and enlarged right atrium and ventricle (4 chamber view, RV: 55 mm, Fig. 1). Chest X-ray and chest computed tomography (CT) showed multiple lung abscesses and pleural effusion (Fig. 2). Cardiac shadow was enlarged. Blood and sputum culture revealed MRSA, which were sensitive to VCM, RFP, and SMZ/TMP. She was referred to the

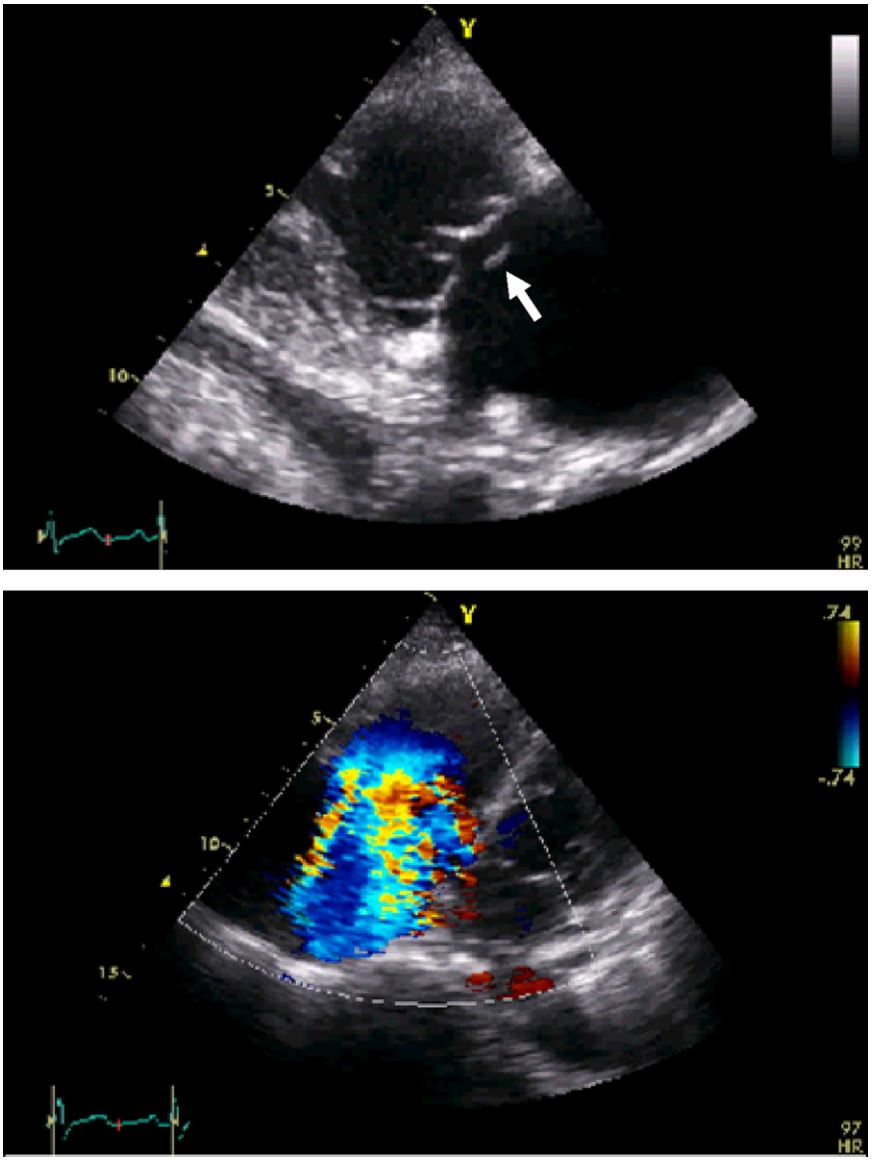

Figure 1 Two-dimensional echocardiogram (Day 5) revealing vegetation (white arrow: 3 mm × 7 mm) on the tricuspid valve and moderate tricuspid valve regurgitation.